

STATE OF MINNESOTA
MINNESOTA POLLUTION CONTROL AGENCY

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DEC 04 1992

In the Matter of the Metropolitan Waste Control Commission and the Metropolitan Council
AIR ENFORCEMENT BRANCH
U.S. EPA, REGION V

Proceedings to Develop
and Implement a State Implementation
Plan for the Ramsey County PM10
Nonattainment Area to Demonstrate,
Attain and Maintain Compliance with the
National Ambient Air Quality Standards
for particulate matter as required by
Sections 110, 172, and 189, of the Clean
Air Act 42 U.S.C. §§ 7410, 7502 and 7513a.

SECOND AMENDED
FINDINGS AND
ORDER

The Minnesota Pollution Control Agency (MPCA), being fully advised in the
premises hereby adopts the following Second Amended Findings and Order.

FINDINGS

1. The state of Minnesota is obligated by sections 110(a), 172 and 189
of the Clean Air Act (CAA), 42 U.S.C. §§ 7410, 7502 and 7513a, to develop a
plan which provides for "implementation, maintenance, and enforcement" of the
primary and secondary national ambient air quality standards (NAAQS)
promulgated by the U.S. Environmental Protection Agency (EPA) pursuant to
section 109 of the CAA, 42 U.S.C. § 7409.

2. The EPA has promulgated requirements for the implementation plans
required by section 110(a) of the CAA at 40 C.F.R. pt. 51 (1990) (Requirements
for Preparation, Adoption and Submittal of Implementation Plans).

3. The EPA has promulgated primary and secondary 24 hour NAAQS for
particulate matter under 10 microns (PM10) of 150 micrograms per cubic meter,
24 hour average concentration at 40 C.F.R. § 50.6 (a). The standards are
attained when the expected number of days per calendar year with a 24-hour

concentration above 150 micrograms per cubic meter, as determined in accordance with 40 C.F.R. § 50 Appendix K (1990), is less than or equal to or less than one.

4. The EPA has also promulgated a primary and secondary annual NAAQS for PM10 of 50 micrograms per cubic meter, annual arithmetic mean at 40 C.F.R. § 50.6 (b). The standards are attained when the expected annual arithmetic mean concentration, as determined in accordance with 40 C.F.R. § 50 Appendix K (1990), is equal to 50 micrograms per cubic meter.

5. The MPCA is a statutory agency of the state of Minnesota, Minn. Stat. § 116.02, subd. 1 (1990), charged with the responsibility to administer and enforce laws and promulgate rules to prevent water, air and land pollution throughout the state of Minnesota, Minn. Stat. chs. 115, 115B and 116 (1990).

6. The MPCA is empowered to promulgate standards and rules for the prevention, abatement or control of air pollution related, without limitation, to "sources or emissions of air contamination or air pollution, to the quality or composition of such emissions, or to the quality of or composition of the ambient air or outdoor atmosphere or to any other matter relevant to the prevention, abatement or control of air pollution." Minn. Stat. § 116.07, subd. 4 (1990). See Minn. Stat. § 116.07, subd. 2 (1990).

7. The MPCA is a statutorily delegated authority to "apply for, receive, and disburse federal funds made available to the state...for any purpose related to the powers and duties of the MPCA or the Commissioner. The Commissioner shall comply with any and all requirements of such federal law or such rules and regulations promulgated thereunder to facilitate application for, receipt, and disbursement of such funds." Minn. Stat. § 116.03, Subd. 3 (1990).

8. The MPCA has promulgated rules preventing any person from emitting any pollutant "in such an amount or in such a manner as to cause or contribute to a violation of any ambient air quality standard beyond such person's property line...." Minn. Rules pt. 7005.0020 (1991). The MPCA has adopted a secondary ambient air quality standard for particulate matter, measured as total suspended particulates (TSP), of 150 micrograms per cubic meter, maximum 24 hour concentration not to be exceeded more than once per year. Minn. Rules pt. 7005.0080 (1991). Exceedances of the federal 150 microgram per cubic meter NAAQS for PM10 are by definition exceedances of the state TSP standard, because PM10 is a subset of TSP.

9. The MPCA has also promulgated rules to control fugitive dust emissions which prohibit any person from using roads, driveways or open areas "without applying all such reasonable measures as may be required to prevent particulate matter from becoming airborne. The Commissioner may require such reasonable measures as may be necessary to prevent particulate matter from becoming airborne ... "Minn. Rules pt. 7005.0550 (1991).

10 The MPCA has the authority to enforce any statute or rule related to air pollution by, among other things, adopting, issuing, entering into or enforcing "reasonable orders, schedules of compliance and stipulation agreements." Minn. Stat. § 116.07, subd. 9 (1990).

11. Minn. Stat. § 115.071 (1990) provides that the provisions of chapters 115 and 116 and "all rules, standards, orders, stipulation agreements, schedules of compliances, and permits adopted or issued" by the MPCA may be enforced by criminal prosecution, action to recover civil penalties, injunction, action to compel performance, or other appropriate action. Specifically, in an action to compel performance of an order of the MPCA, the regulated party may be required "to do and perform any and all acts and things

within the defendant's power which are reasonably necessary to accomplish the purposes of the Order." Minn. Stat. § 115.071, subd. 5 (1990).

12. The area bounded by the Mississippi River from Lafayette to Route 494, Route 494 east to Route 61, Route 61 north to I-94, I-94 west to Lafayette, and Lafayette south to the Mississippi River, in Ramsey County, Minnesota (hereinafter described as the "Ramsey County PM10 Nonattainment Area") is located within the Minneapolis-St. Paul Intrastate Air Quality Control Region (AQCR 131) defined at 40 C.F.R. § 81.27 (1990). The Ramsey County PM10 Nonattainment Area described above was designated as a nonattainment area for the primary NAAQS for PM10 by operation of law in § 107(d)(4)(B)(i) of the CAA Amendments of 1990, (as announced and further clarified by the EPA in 56 FR 11101, Mar. 15, 1991). The Metropolitan Wastewater Treatment Plant is located within this nonattainment area.

13. The Metropolitan Waste Control Commission (Commission) and the Metropolitan Council (Council), are public agencies organized and existing under the laws of the state of Minnesota, and are responsible for the operation and capital improvements at the Metropolitan Wastewater Treatment Plant at 2400 Childs Road, in St. Paul in the county of Ramsey, state of Minnesota (the Facility). The council shall be liable only to the extent of its statutory authority over the Facility.

14. The Facility emits pollutants into the ambient air in sufficient quantities to require an air emission permit from the MPCA pursuant to Minn. Stat. § 116.081 (1990) and Minn. Rules pts. 7001.0030 and 7005.1210 (1991). The MPCA issued an air emission permit No. 879-90-OT-3 on July 12, 1990, for the operation of the Facility. That permit remains in effect today. This

Order imposes requirements on the Commission (i.e. specified in Parts I. through VI. below) in conjunction with the control plans being required of other PM10 sources in the area, that will achieve and maintain compliance with the NAAQS for PM10.

15. FACILITY DESCRIPTION

There are fourteen emission points at the Facility that emit particulate matter. Of these, six are incinerators used to reduce volume and recover energy from the residual solids (sewage sludge and scum) generated at the Facility. Exhaust gas from each sludge incinerator passes through an air pollution control system consisting of a precooler, a Venturi scrubber, and a packed tower subcooler with demister. Before entering the air pollution control system, exhaust gas from four of the incinerators passes through a quad cyclone and a waste heat recovery boiler. Each incinerator discharges through its own 117-foot stack. These incinerators are identified as emission points 1 through 6 in this Order (and in the Facility's permit). Two of the particulate matter emission points are auxiliary natural gas/fuel oil fired boilers which supply steam for plant process and heating needs at the Facility. These two boilers, identified as emission points 8 and 9, exhaust through 90-foot stacks. Six of the particulate matter emission points are baghouses related to the handling of ash and other material, and they each emit through 77-foot stacks. They are identified as emission points 10 through 15. A more specific Facility description taken from the Facility permit which describes these emission points is attached as Exhibit 1, which is incorporated by reference herein.

16. The Facility is a potential major contributor of PM10 emissions in the Ramsey County PM10 Nonattainment Area, based on computer modeling performed by MPCA staff using the EPA guideline air quality dispersion model ISCST version 90346. It is a "culpable" source, as that term is used in the computer

modeling context, of PM10 emissions in the Ramsey County PM10 Nonattainment Area. Particulate matter emissions from the Facility contribute, along with emissions from other facilities in the area, to a violation of both the PM10 NAAQS and the state particulate matter (TSP) standards.

17. The MPCA finds that if the Commission and the Council comply with the following requirements, and if the other facilities receiving orders under Minnesota's proposed PM10 State Implementation Plan (SIP) comply with the requirements of those orders, Minnesota will make reasonable further progress toward, and will ultimately attain and maintain, compliance with the NAAQS for PM10 in the Ramsey County PM10 Nonattainment Area of AQCR 131. This Finding is based on the air dispersion modeling, which established the requirements contained in this Order. The modeling parameters for the Commission's Facility are those contained in Exhibit 1.

18. On November 26, 1991, the MPCA issued a Findings and Order (hereinafter Original PM10 Order) to the Commission and Council regarding its PM10 emissions. On August 25, 1992, the MPCA issued an Amended Findings and Order to the Commission and Council, which deviated somewhat from, and superseded, the Original PM10 Order. Also on August 25, 1992, the MPCA Board delegated to the MPCA Commissioner the authority to issue yet another, revised version of this Order if additional changes to it were necessary to obtain EPA approval and the changes were minor or made with the consent of the recipient of the order. This Order, entitled Second Amended Findings and Order, is being issued by the MPCA Commissioner pursuant to that delegation. It supersedes the Amended Findings and Order issued on August 25, 1992. The changes made between the Amended Findings and Order and this Order are minor, and have been made in order to secure EPA approval of the PM10 SIP of which this Order is a part.

ORDER

NOW, THEREFORE, IT IS ORDERED, that the Commission shall comply with the requirements listed below in operating the Metropolitan Wastewater Treatment Plant in order to attain, demonstrate, and maintain compliance with the federal ambient air quality standards for PM10 as set forth in 40 C.F.R. 50.6. In addition, the Council is ordered to generally facilitate the Commission's compliance with this Order, but only to the extent of the Council's statutory authority over the Facility. Specifically, the Council shall approve any necessary capital improvement program and secure the funds for any capital projects the Commission may require to comply with this Order.

I. METROPOLITAN WASTEWATER TREATMENT PLANT PM10 EMISSION CONTROL PLAN

This Part of the Order is the Facility's PM10 emissions control plan, which is based upon air dispersion modeling that shows that the control plan (in conjunction with the control plans being required of other PM10 sources in the area) will attain compliance with NAAQS. Exhibit 1 is the Facility description which provides the modeling parameters for the Commission's Facility used in the modeling technical support document, and describes the equipment subject to the Facility's PM10 emissions control plan. The Commission shall operate and maintain the equipment described in Exhibit 1 within the parameters described in Exhibit 1, except as may be specifically allowed or required by other provisions of this Order. The remainder of this Part is divided into two sections. The first section contains the Facility emission limitations and operational requirements. The second section contains the Facility compliance demonstration requirements for the stack emissions and operating requirements.

A. Emission Limitations and Operational Requirements

Emission Limitations

The Commission shall not exceed the following emission limits for PM10 and opacity for the equipment described in Exhibit 1:

PM10
Emission
Point Nos.

Emission Limit

Limitation Basis

1-6

1.2 lbs/ton of dry sludge
charged

Minnesota State
Implementation Plan
modeled PM10
ambient air quality
standard compliance

8-9

0.10 lb/million Btu

Minnesota State
Implementation Plan
modeled PM10
ambient air quality
standard compliance

10-15

0.050 gr/dscf

Minnesota State
Implementation Plan
modeled PM10
ambient air quality
standard compliance

Opacity

1-6

20 percent opacity

Minn. Rules part
7005.2370 & 40 CFR
60 subpart 0

8-9

20 percent opacity; (except
that a maximum of 60%
opacity shall be per-
missible for four minutes in
any 60-minute period and that
a maximum of 40% opacity shall
be permissible for four
additional minutes in any
60-minute period).

Minn. Rules part
7005.0330

10-15

20% opacity

Minn. Rules part
7005.0480 Subp 1.B

B. Demonstration of Compliance With Emission Limitations.

1. Performance Stack Testing

The Commission shall demonstrate compliance with applicable conditions of this Order, Minnesota and federal statutes, federal regulations and Minnesota rules by the following methods, and in accordance with Exhibit 2, which is attached and incorporated by reference herein, as specified in the table below.

<u>Emission Point</u>	<u>Pollutant</u>	<u>Compliance Determination Method</u>	<u>Minimum Frequency</u>	<u>Testing Procedures and/or Exhibit</u>
1-6 (sludge incinerators)	PM-10	Stack Emissions Performance Test	Annually	Minn. Rules 7005.2400 as modified by 7005.0500 or 40 CFR 51, Appendix M, Methods 201/201A, promulgated at 55 Fed. Reg. 14246 (April 17, 1990), and Method 202 for condensibles promulgated at 55 Fed. Reg. 65433 (December 17, 1991).
1-6 (sludge incinerators)	Opacity	Visual Observations	Annually	40 CFR part 60, Appendix A Method 9.
1-6 (sludge incinerators)	Opacity	Opacity Monitors	Continuous	40 CFR part 60, Appendix B
8,9 (boilers)	PM10	Stack Emissions Performance Test	Prior to 9/30/93 and additionally when required under Section 114 of the Clean Air Act	Minn. Rules 7005.2400 as modified by 7005.0500 or 40 CFR 51, Appendix M, Method 201/201A Promulgated at 55 Fed. Reg.

8,9 (boilers)	Opacity	Visual Observations	Prior to 9/30/93 and additionally when required under Section 114 of the Clean Air Act	14246 (April 17, 1990) and Method 202 for condensibles promulgated at 55 Fed. Reg. 65433 (December 17, 1991). 40 CFR part 60, Appendix A, Method 9.
10-15 (baghouse)	PM10	Performance Test	Prior to 9/30/93 and additionally when required under Section 114 of the Clean Air Act	Minn. Rules 7005.2400 as modified by 7005.0500 or 40 CFR 51, Appendix M Methods 201/201A, promulgated at 55 Fed. Reg. 14246 (April 17, 1990) and Method 202 for condensibles promulgated at 55 Fed. Reg. 65433 (December 17, 1991).
10-15 (baghouses)	Opacity	Visual Observations	Prior to 9/30/93 and additionally when required by Section 114 of the Clean Air Act	40 CFR part 60, Appendix A, Method 9.

2. Continuous Monitoring Equipment

The Commission shall install, maintain, calibrate, and operate Continuous Emission Monitors (CEMS) for opacity located in the stacks serving the sludge incinerators (Emission Points 1-6) in accordance with EPA Performance Specification 1 as described in 40 CFR Part 60, and Minn. Rules parts 7005.1850-1880.

a. Certification Notification. The Commission shall notify the AQD Manager at least twenty-one (21) days prior to conducting any CEM certification test. Subsequent recertifications of the CEMS shall be performed by the Commission upon request by the AQD Manager, the EPA Region V Regional Administrator, or an EPA authorized designee.

b. Maintenance. The Commission shall maintain all opacity CEMS and associated equipment so as to achieve a 90 percent minimum up-time based on monthly reporting periods.

3. If additional testing (pursuant to section I.B.1) or recertifications (pursuant to section I.B.2) are requested the Commission may, if the request is made by the AQD Manager, appeal such request to the MPCA Board pursuant to MPCA rules or procedures.

II. CHANGES NOT REQUIRING A MODIFICATION OF THIS ORDER

A. Except as specifically provided in this section, the Commission is allowed to make to the following changes to the Facility without obtaining a modification to this Order:

1. The Commission may make any change necessitated by a contingency plan approved and implemented under this Order.

2. In addition to the above, the Commission may make other changes to the Facility as long as the change does not increase, from any emission point, the PM10 emissions rate (whether lbs./ton, lbs./million BTU, lbs./hour, or gr/dscf) or overall PM10 emissions, or alter equipment or parameters described in Exhibit 1 in such a way as to deviate from the building wake effects assumed in the PM10 computer modeling underlying the Order. For purposes of interpreting this provision, the following activities are considered to change PM10 emissions or to deviate from significant modeling assumptions, and therefore cannot be changed without a modification of this Order:

- a. any decrease in stack emissions exit velocity;
- b. any decrease in the exit point heat content of stack emissions;
- c. any reduction in stack height below that contained in Exhibit 1;
- d. any increase in the stack exit diameter above that contain in Exhibit 1; or
- e. any construction or modification of structures that increase effective structure dimensions in such a way as to deviate from the building wake effect assumed in the PM10 modeling underlying this Order.

4. The Commission may develop and test an experimental technology for enhanced removal of sub-micron particulates, as described in Exhibit 4.

B. Any modification to this Order approved by the MPCA shall not revise the federally enforceable requirements of the State Implementation Plan until approved by the EPA. Regardless of whether an Order modification is required, the Commission shall obtain a permit amendment if required by state or federal law.

III. CONTINGENCY PLAN REQUIREMENTS FOR PM10 NONATTAINMENT AREAS

In the event that the nonattainment area in which the facility is located fails to attain compliance with the PM10 NAAQS by the federally mandated attainment date, the following contingency plan shall be implemented by the Commission. These measures shall be implemented by the Commission immediately following formal determination and notification of the nonattainment status by the MPCA or the EPA.

A. If the nonattainment is due to a violation of the NAAQS by less than ten percent, the Commission shall:

1. Use a pickup type street sweeper to weekly sweep the paved streets and service roads in the Metro Plant except when covered with snow.

2. Water the unpaved roads located within the boundaries of this Facility. Watering shall comply with the following conditions:

i. The water application rate shall be at least 0.03 gallons for each square foot at least once every 24 hours.

ii. A 0.1 inch rainfall during the previous 24 hours shall substitute for one water application.

iii. Water application is not required when the air temperature is below 32°F (Generally November 1 through April 1), or on any day that has no traffic on the road.

iv. Following any day when water is not applied based on the absence of traffic, water shall be applied within three hours of the recommencement of traffic.

3. Evaluate the specifications for and reduce the use of skid control sand and salt.

B. If the nonattainment is due to a violation of the NAAQS by more than ten percent, the Commission shall:

1. Pave roads to the ash storage basins, in the event that incinerator ash is hauled to the ash storage basins.

2. Shall implement the activities described in III.A. above.

IV. RECORDKEEPING REQUIREMENTS

This Part IV. of this Order requires the Commission to keep specified records so that EPA and the MPCA can evaluate the Commission's compliance with the Order. The first section identifies which records the Commission must

keep. The second section requires the Commission to keep records in the form and with the accessibility needed for EPA and MPCA staff inspection. For the purposes of the section, either paper or computerized records may be maintained. For purposes of this provision, shutdown for incinerators shall mean use of emergency damper.

A. The Facility Recordkeeping Requirements

1. Permanent Records

The Commission shall permanently maintain the following information together with all amendments, revisions, and modifications to this information.

a. Design, Construction and Operation Information. The Commission shall maintain a file or files of information on the design, construction and operation of each emission facility, emission source, fuel system, stack, structures pertinent to modeling of building wake effects, and any other information required to conduct PM10 ambient air quality modeling of emissions from the Facility. The file or files shall also include all information required to demonstrate that the equipment identified in Exhibit 1 is installed as described in that Exhibit. Where an activity has been undertaken pursuant to Part II. of this Order, the file or files shall include a description of each activity and all information required to demonstrate that the activity complies with each applicable Part II. requirement.

b. PM10 Emission Compliance Demonstration Plans. The Commission shall maintain a file at the facility which includes this Order and the Exhibits attached and incorporated by reference in this Order, and all plans which have become integral and enforceable parts of this Order.

2. Non-Permanent Records

The Commission shall retain the information identified below for a minimum of six years following the date on which the information was obtained, despite any document retention policy to the contrary. This retention period shall be automatically extended upon the AQD Manager's written request.

a. Monitoring, Testing, and Other Records. The Commission shall maintain files containing records of measurements including: performance stack testing measurements and operating conditions during the performance stack tests; all opacity monitoring device calibration checks; all adjustments and maintenance performed on these opacity monitors systems or devices; all data and recordkeeping set forth in this Part, and all other information required or applicable to verify compliance with this Order.

b. PM10 Emissions and Operations Records. The Commission shall maintain files containing information to demonstrate compliance with the PM10 emissions and opacity limitations and operational requirements of this Order. In addition, the Commission shall maintain the following records.

(1) Hours of bypassing of each scrubber, when sludge is fed to incinerator.

(2) Hourly average scum feed rate for each incinerator, gallons per hour.

(3) Hours of nonoperation of continuous emission monitors (opacity), and nature of the system repairs and/or adjustments.

(4) Opacity exceedances of 20 percent and greater opacity, six minute averages, (based on CEM data), causes(s) of opacity exceedance and corrective action taken.

(5) A record of the measured pressure drop of the gas flow through each Venturi scrubbing device at least once per calendar day.

(6) A record of the rate of sludge charged to each incinerator, the measured temperatures of each incinerator, the fuel flow to each incinerator, and the total solids and volatile solids charged to each incinerator at least once per calendar day.

(7) For incinerators, a record of the use of the emergency damper for each incinerator, including the hours of and reasons for its use.

(8) For baghouses, a record of the shutdown, bypass, or breakdown of each piece of control equipment to which this Order applies, including hours of and reasons for the shutdown, bypass, or breakdown.

c. Records of Excess Emissions and Noncompliance with Operational Requirements. The Commission shall maintain files which record each exceedance of an emission limitation or opacity limitation, and any noncompliance with an operational requirement at the Facility for the emission points, control equipment or fugitive sources subject to the limitations and operational requirements of this Order. The record shall include for each period of exceedance or noncompliance, a description of the exceedance or noncompliance, its cause, the magnitude of the exceedance and the date and time of commencement and cessation of the exceedance or noncompliance. The Facility operation does not allow sludge feed to occur without the pollution control train on-line. Therefore, for the purposes of this provision, records of the use of the emergency damper will be maintained.

d. In the event that the Contingency Plan (Part III of this Order) becomes in effect, the Commission shall maintain the following records:

(1) a daily log initialed by the responsible Facility operator of roads watered and quantity of water used, time watered, method of application, or indication that there was no traffic on the roads, or that there was a 0.1 inch or greater rainfall within the previous 24 hours and the basis for measurement (National Weather Service or on-site rain gauge).

(2) records of water equipment breakdowns and subsequent start-ups.

B. Record Maintenance

The Commission shall maintain all required documents, records, reports and plans in a form suitable for determination of the Facility's compliance with this Order by EPA or MPCA staff. The Commission shall maintain the information in files which are easily accessible for inspection by EPA or MPCA staff, and are available for inspection at all reasonable times.

V. REPORTING REQUIREMENTS

A. Notifications

1. Notifications of Process or Control Equipment Shutdown

In accordance with Minn. Rules pt. 7005.1880 (1991), the Commission shall notify the MPCA Commissioner at least 24 hours in advance of:

(1) a shutdown of any control equipment governed by this Order, or (2) a shutdown of any process equipment governed by this Order if either shutdown will cause an increase in PM10 emissions. At the time of the notification, the Commission shall notify the MPCA Commissioner of the cause of the shutdown and the estimated duration. Startup, cool down and stand by status of incinerator shall not constitute process equipment shut down periods. The Commission shall also notify the MPCA Commissioner when the shutdown is over. For the purposes of this provision, shutdown for the incinerators shall mean use of the emergency damper.

2. Notification of Process or Control Equipment Breakdown

The Commission shall notify the MPCA Commissioner by the end of the next working day of: (1) a breakdown of more than one hour duration of control equipment governed by this Order or (2) a breakdown of process equipment governed by this Order, if either breakdown causes an increase in the

emissions of PM10. When reporting a breakdown, the Commission may report both the breakdown and subsequent startup during the same notification only if the subsequent startup will occur during the same day and if the Commission knows the time of the subsequent startup. In the event that the subsequent startup is on the next day, the Commission shall notify the MPCA of the startup at that time. In the event that the Commission uses a single notification to report both the breakdown and subsequent startup, and if the anticipated startup time is delayed, the Commission shall notify the MPCA of the new startup time. This second notification shall be provided at or before the time originally projected for the subsequent startup. In this case, the Commission shall also notify the MPCA when the breakdown is over.

3. Notification of Performance Tests

The Commission shall notify the AQD Manager of its intent to conduct performance stack tests required pursuant to this Order not less than 30 days prior to conducting each performance stack test as required by Minn. Rules pt. 7005.1860, subp. 6 (1991). The Commission shall schedule and hold a pretest meeting with the MPCA staff at least seven days prior to conducting a performance stack test and shall submit to the MPCA performance stack test plans, protocols, and schedules at least 15 days prior to the test meeting. The test date and protocol are subject to the AQD Manager's approval and shall have been approved by the AQD Manager at least 15 days before the planned test date.

4. Notification of Changes to be Made Pursuant to Part II. of the Order

The Commission shall notify the AQD Manager in writing at least 180 days prior to undertaking an activity allowed by Part II. of this Order. The written notification shall describe the change the Commission is proposing

to make, and shall include submittal of a permit application for the change, if required pursuant to Minnesota statutes, Minnesota rules or federal statutes or regulations. Each such written notification shall include all information necessary to demonstrate the activity fully complies with Part II. of this Order.

B. Annual Reports

The Commission shall submit to the AQD Manager each calendar year a report that contains the following information: a record of data used in calculating, and calculations of the PM10 emissions; a record of each startup, shutdown, bypass and breakdown of process and control equipment described in Part II of Exhibit I, and a summary record of excess PM10 emissions, opacity exceedances, and noncompliance with operational requirements (or the Commission shall state if no exceedances occurred in the calendar year). The report shall include the information required by Part IV.A. Annual reports shall be postmarked within 60 days following the end of each calendar year.

C. Performance Stack Tests Reports

The Commission shall submit to the AQD Manager, reports of each performance stack tests conducted pursuant to this Order. Performance stack test reports shall be postmarked no later than 45 days following completion of the performance stack test.

D. Continuous Monitor Reports

The Commission shall submit to the AQD Manager a quarterly report on the Excess Emission and CEM Reporting form, which is appended as Exhibit 3 and incorporated by reference herein. Each report shall list all opacities of 20 percent or greater opacity, based on six minute averages. If no excess opacity emissions occur, the report shall state that there were no exceedances during the applicable interval or period. The opacity reports shall be submitted by the twenty-first (21) day of the month following the monitored quarter.

VI. GENERAL CONDITIONS

A. Before the Commission performs any construction, modification or operation of equipment not allowed by Part I. or II. of this Order and which results in additional PM10 emissions from any emission point, or changes to PM10 emission patterns assumed in the modeling conducted to attain, maintain and verify compliance with the PM10 NAAQS, the Commission shall obtain a modification of this Order, and the construction, modification or operation shall be governed by Part VI.B. below. Any modification to this Order approved by the MPCA shall not revise the federally enforceable requirements of the State Implementation Plan until approved by EPA.

B. The Commission and Council shall not construct any new PM10 sources or modification to PM10 sources at the Facility that are defined as "major stationary sources" or "major modifications" under 40 CFR § 52.24 (1990) until EPA approval of the Minnesota Offset Rule, or its equivalent. After such approval, the permitting of any new PM10 sources or modifications at the Facility will be done under the Offset Rule or its equivalent, until the Ramsey County PM10 Nonattainment Area has been redesignated an attainment area.

C. 1. This Order does not relieve the Commission and Council of the obligation, in undertaking all actions required by this Order, to comply with all applicable local, state and federal laws and regulations, including, but not limited to, federal new source performance standards, and laws and regulations related to occupational safety and health. In the event there is a conflict in applicable federal or state or local laws or regulations, the more stringent of the conflicting provisions shall apply.

2. The Commission or the Council may request that the Regional Administrator establish an alternative dispute resolution process should a conflict arise between the requirements of the Order and the Facility's NPDES permit.

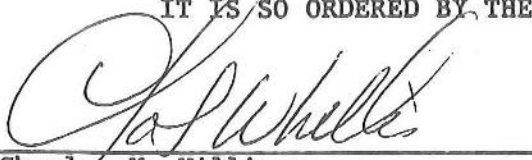
D. This Order shall be binding upon the Commission and Council and their respective officers, employees, successors and assigns. The Commission shall provide a copy of this Order to any successor in interest prior to transfer of that interest. The Commission and the Council shall notify the MPCA of any such transfer of interest in the Facility within thirty (30) days of the Commission's and Council's knowledge that the transfer will occur. Should the Commission sell or otherwise convey or assign any of its right, title or interest in the Facility, such conveyance shall not release the Commission from any obligation imposed by this Order, unless the party to whom the right, title or interest has been transferred or assigned agrees in writing to fulfill the obligations of this Order and the MPCA finds that the new owner has the ability to fulfill the obligations of this Order, and approves such transfer or assignment.

E. This Order mandates actions and establishes limits necessary to attain, maintain and verify compliance with the federal PM10 NAAQS by the Commission and Council. To the extent that any federal or state statute, rule, permit, order, stipulation agreement, consent decree or schedule of compliance now in force or subsequently issued imposes limits and requires actions : additional to or more stringent than those required in this Order, the Commission and Council shall also comply with the requirements of the federal or state statute, rule, permit, order, stipulation agreement, consent decree or schedule of compliance.

F. This Order is effective upon the date that it is signed by the MPCA Commissioner. The August 25, 1992, Amended Findings and Order issued by the MPCA to the Commission and Council is terminated upon issuance of this Order.

G. Either the Commission or Council may petition the MPCA to modify this Order in accordance with the procedures for modifying the State Implementation Plan. Such modification may include termination of this Order by MPCA. Any decision not to initiate the modification procedures shall be made by the agency board and shall be a final decision reviewable pursuant to Minnesota Statutes § 115.05. After all or a portion of this Order is approved by EPA as part of the State Implementation Plan, those portions of the Order will remain federally enforceable until it is modified or terminated by EPA. The November 26, 1991, Findings and Order issued by the MPCA to the Commission and the Council is terminated upon issuance of this Amended Findings and Order.

IT IS SO ORDERED BY THE MINNESOTA POLLUTION CONTROL AGENCY.



Charles W. Williams
Commissioner
Minnesota Pollution Control Agency

Date: _____

11/30/92

EXHIBITS:

1. Facility Description
2. Compliance Demonstration Program
3. Excess Emission and CEM Reporting Form
4. Experimental Technology Procedures

FACILITY DESCRIPTION

I. Overview

The emission facility consists of seven (7) incineration systems which are used for volume reduction and energy recovery from residual solids (sewage sludge and scum) generated at the plant and two (2) auxiliary natural gas/fuel oil fired boilers which supply steam for plant process and heating needs at the Metropolitan Wastewater Treatment Plant. The facilities are further described in a collection of plans and specifications on file with the Agency and in various publications of the Commission to dispose of the sewage sludge generated in the plant, and waste heat and fuel fired auxiliary boilers to supply the steam needs of the Metropolitan Wastewater Treatment Plant.

Sludge feed to the incinerators consists of conditioned and dewatered sludge from the plant's primary and secondary treatment facilities. Conditioning systems include thermal conditioning, chemical conditioning with polymer, and chemical conditioning with lime and ferric chloride. Dewatering systems include filter presses, roll presses, and vacuum filters. Dewatered sludge can be fed to the incinerators as individual flow streams or as a combined flow stream blended in pug mills. The estimated cake solids content is usually in the 30% to 40% solids range, with an overall range of 20% to 50% solids.

There are six (6) multiple hearth sludge incinerators, numbered 5 through 10 and located in the Solids Processing Building. Each incinerator has nine hearths, numbered 0 to 8. Hearth 0 is the afterburner hearth. Sludge is introduced on Hearth #1. Process operating zones in the incinerator are drying, combustion, fixed carbon burnout, and ash cooling. Ash is collected at the bottom of the incinerator and sluiced to ash ponds or pneumatically transferred dry to storage silos.

Auxiliary burners, which use either natural gas or No. 2 fuel oil, are located on Hearths 0, 2, 4, 6, and 7. These auxiliary burners are used to maintain combustion and afterburner temperatures. Odorous air is vented into the incinerators via the secondary combustion air fans.

Exhaust gas from each sludge incinerator passes through an air pollution control system, consisting of a precooler, Venturi scrubber, and packed tower subcooler with demister. Exhaust gas is discharged to a stack. Prior to entering the air pollution control system, exhaust gas from Incinerator Nos. 7-10 passes through a quad cyclone and a waste heat recovery boiler. The exhaust gas from Incinerator Nos. 7-10 can also pass through a heat wheel, wherein cold ambient air for the rotary sludge dryers can be heated.

Incinerators 1-4, which previously disposed of primary sludge, have been retired from sludge incineration.

Primary Combustion Air Fans

Number:	2	4
Capacity, acfm @ 70°F:	5,000	5,000
Static Pressure, in. W.C.:	35	35
Motor Size, hp:	40	40

Secondary Combustion Air Fans

Number:	2	4
Capacity, acfm:	31,000	31,000
Inlet Temp., °F:	70	300
Static Pressure, in. W.C.:	6	18
Motor Size, hp:	75	150

Rabble Arm Cooling Air Fans

Number:	2	4
Capacity, acfm:	7000	7000
Static Pressure, in. W.C.:	10.5	10.5
Motor Size, hp:	30	30

Control Equipment

Incin.	Incin.
5-6	7-10

1. Cyclone Dust Collectors

Number:	None	4
Gas Flow:		82,000 acfm @ 1200°F
Pressure Drop:		5 in. W.C.

2. Precoolers

Number:	2	4
Maximum Water Flow, per Unit, gal/min.:	600	600
Inlet Gas Flow per Unit, acfm:	82,000	58,000
Gas Temperature, °F		
Inlet:	1200-1400	490
Outlet:	180	180

3. Venturi Scrubbers

Number:	2	4
Gas Temperature, °F		
Inlet:	180	180
Outlet:	160	160
Water:Gas Ratio Gal/1000 acf:	10	10
Maximum Water Flow, per Unit, gal/min.:	500	500

EmissionPoint No. 10 Facility I.D. Stack I.D. PV-01

Emission Unit - Type: Variable House Cleaning Vacuum

Control Equipment - Type: Simple cyclone
Mfr.: Fuller
Cone Height: 45 inches
Inlet Width: 8 inches

Control Equipment - Type: Bottom load reverse jet pulse baghouse
Mfr.: Fuller
Pressure Drop: 10 inches of H₂O average;
15 inches of H₂O maximum
Air to Cloth Ratio: 4.0:1
No. of Bags: 96
Guaranteed Control Efficiency: 99% @ 3 μ m

Monitoring Equipment - None

Stack Parameters - Height: 77 feet
Inside Exit Diameter: 0.667 feet
Flow Rate, acfm
(for primary fuel): 2515 @ 70°F

EmissionPoint No. 11 Facility I.D. Stack I.D. PV-02

Emission Unit - Type: Ash Collection ^{int.}Incinerator Cyclone WHRB

Control Equipment - Type: Simple cyclone
Mfr.: Fuller
Cone Height: 45 inches
Inlet Width: 8 inches

Control Equipment - Type: Bottom load reverse jet pulse baghouse
Mfr.: Fuller
Model: 78-20363-170-9
Pressure Drop: 10 inches of H₂O average;
15 inches of H₂O maximum
Air to Cloth Ratio: 6.3:1
No. of Bags: 48
Guaranteed Control Efficiency: 99% @ 3 μ m

Monitoring Equipment - None

Stack Parameters - Height: 77 feet
Inside Exit Diameter: 0.667 feet
Flow Rate, acfm
(for primary fuel): 2950 @ 100°F

Flow Rate, acfm
(for primary fuel): 2950 @ 120°F

Emission
Point No. 14 Facility I.D. Stack I.D. PV-06

Emission Unit - Type: House Cleaning

Control Equipment - Type: Simple cyclone
Mfr.: Fuller
Cone Height: 110 inches
Inlet Width: 4 inches

Control Equipment - Type: Bottom load reverse jet
pulse baghouse
Mfr.: Fuller
Pressure Drop: 10 inches of H₂O average;
15 inches of H₂O maximum
Air to Cloth Ratio: 5.46:1
No. of Bags: 24
Guaranteed Control Efficiency: 99% @ 3 μm

Monitoring Equipment - None

Stack Parameters - Height: 77 feet
Inside Exit Diameter: 0.5 feet
Flow Rate, acfm
(for primary fuel): 858 @ 120°F

Emission
Point No. 15 Facility I.D. Stack I.D. FN313

Emission Unit - Type: Fugitive Ash Pickup i.e.
Screw Conveyors, Bucket
Elevator, Ash Conditioners

Control Equipment - Type: Top loaded reverse jet
baghouse
Mfr.: Fuller
Pressure Drop: 10 inches H₂O average;
15 inches H₂O maximum
No. of Bags: 160
Air to Cloth Ratio: 4.7:1

Monitoring Equipment - None

Stack Parameters - Height: 77 feet
Inside Exit Diameter: 1.25 feet
Flow Rate, acfm
(for primary fuel): 7900 @ 70°F

EXHIBIT 2

PERFORMANCE TEST PROCEDURES

PM-10

A. Independent Testing Company

The Company shall engage an independent testing company to conduct performance tests. However, performance tests that are not required by the Order or requested by the MPCA pursuant to Minnesota Rules part 7005 may be conducted by the Company with written permission of the Minnesota Pollution Control Agency (MPCA) Air Quality Division (AQD) Manager. The Company may furnish electrical service, laboratory facilities and other such facilities to an independent testing company in any case.

B. Test Location Approval

The location, number of test ports, and the need for straightening vanes must be approved by the AQD Manager before any test. Information regarding ports (location from top of stack to bottom, diameter, visual schematic) must be provided seven (7) days before the pretest meeting.

C. Pretest Meeting

For the purpose of establishing conditions and requirements of a performance test, a pretest meeting with the MPCA staff, Company, and testing company personnel must be held at least seven (7) working days prior to the performance test. The test date must be approved by the Air Quality Division (AQD) Compliance Determination Unit (CD Unit) staff at least 30 days before the planned testing date. Notification must be given in writing.

D. Test Methods

1. General

Performance tests shall be conducted in accordance with the following requirements:

- a. U.S. Environmental Protection Agency (U.S. EPA) Reference Methods (40 C.F.R. 60.344, Appendix A, 40 CFR 51, Appendix M, and 40 CFR 61, Appendix B);
- b. Deviations from the U.S. EPA Reference methods, even if authorized under Minnesota Rules, procedures specified below, or special conditions of the Order or requirements specified by the AQD Manager, shall be permissible only with the written approval of EPA.
- c. Where a Method is referenced, the most current edition should be used.

2. PM-10 (particulate matter less than or equal to 10 micrometers) shall be determined by U.S. EPA methods 201, or 201A in Appendix M of 40 CFR 51, and condensible matter shall be determined by Method 202 in Appendix M of 40 CFR 51.
3. Opacity shall be determined by U.S. EPA method 9. Where Method 9 cannot be used to determine opacity limitations that permit exceedances of a baseline opacity limit for specified numbers of minutes, the data reduction procedures listed in D.2. shall be used to determine compliance.
 - a. Opacity observations shall be performed by a certified observer in accordance with U.S. EPA Method 9 throughout the test period, and the data reduced with the procedures listed below. Opacity shall be observed during the period of each test run for sixty consecutive minutes.
 - b. One series of readings is required for each condition tested. The test will comprise 240 consecutive readings and shall be obtained concurrently with test run(s) for particulate matter, where applicable. Copies of the opacity form showing all readings and required notation shall be included in the performance stack test report.
 - c. The results of continuous monitoring by transmissometer which indicate that the opacity at the time visual observations were made was not in excess of the standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the owner or operator shall meet the burden of proving that the instrument used meets (at the time of the alleged violation) Performance Specification 1, has been properly maintained and (at the time of the alleged violation) calibrated and that the resulting data have not been tampered with in any way.
 - d. The opacity standards set forth in a regulation shall apply at all times except during periods of start-up, shutdown, malfunction, and as otherwise provided in the applicable compliance document, federal regulation or Minnesota rule.
 - 1) Data Reduction. Except as provided in item D(2), opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals. Divide the observations recorded on the record sheet into sets of 24 consecutive observations. A set is composed of any 24 consecutive observations. Sets need not be consecutive in time and in no case shall sets overlap. For each set of 24 observations, calculate the average by summing the opacity of the 24 observations and dividing this sum by 24. Record the average opacities on a record sheet.
 - 2) In the event that an applicable standard of performance for opacity allows an excursion above the standard for a specified number of minutes in a one-hour period, compliance with that excursion will be determined as follows:

- a) If only one excursion limitation is specified, count the number of observations above the applicable standard and multiply that number by 0.25 to determine the number of minutes of opacity observations above the standard. Compare the time above the opacity limit to the time allowed in the excursion. A violation will be recorded if the number of minutes above the standard exceeds the time allowed or if the average value of any set of four opacity observations is greater than the excursion opacity limit.
- b) If two excursions above a standard are allowed, count the number of observations that lie between the standard and the lower excursion opacity limit. If the number of observations multiplied by 0.25 is greater than the number of minutes allowed, the observations with lowest values shall be used to determine compliance with that excursion and the remaining, highest, values will be carried forward to determine compliance with the higher excursion limit.

In determining compliance with the higher excursion, count the number of readings carried over from the lower excursion plus the number of readings that are higher than the lower excursion opacity limit. If the total number of readings multiplied by 0.25 is greater than the number of minutes allowed then a violation is recorded. In addition, a violation will be recorded if the average value of any four opacity observations is greater than the higher excursion opacity limit.

- c) Any violation of an excursion to an opacity standard will be expressed as the total number of minutes the opacity excursion limit is exceeded during a period of consecutive 15-second observations.

E. Test Conditions

Combustion Sources and Process Sources shall conduct performance tests under conditions that are encountered during normal production activities which would result in the high-test potential emissions for each air pollutant.

1. Combustion Sources

- a. Existing Sources and Other Sources not subject to New Source Performance Standards.
 - 1) Combustion emission sources such as furnaces, kilns, boilers, etc. shall be operated during the test at 50-100% of the manufacturer's rated capacity as specified by the MPCA or by U.S. EPA.
 - 2) Existing boilers that had been derated shall be operated during the test at a minimum of 50-100% of the derated capacity allowed by the order as specified by the MPCA or by U.S. EPA.

- 3) For unit sizes below 50 million British thermal units per hour (MMBtu/hr) some of the test conditions and requirements listed in Part E.1.c. of this Exhibit, may be waived by the AQD Manager to meet simplified equipment and operating modes of smaller installations.
- b. Sources subject to New Source Performance Standards (NSPS).
- 1) Combustion emission sources such as furnaces, kilns, boilers, etc. shall be operated during the test at 100% of the manufacturer's rated capacity.
 - 2) The only exceptions to this are where the Company has documented the fact that the source is physically incapable of operation at design capacity and/or there is a State/Federal enforceable order or permit limiting operation to a reduced capacity. In case the source is derated, the test shall be conducted at 100% of the allowed derated capacity.
 - 3) The amendments to NSPS Subpart A - General Provisions published in the Federal Register of December 27, 1985, require a minimum total time of opacity observations of three (3) hours for the purpose of demonstrating initial compliance. Opacity observations shall be conducted concurrently with the initial performance test for particulates.
 - 4) Where compliance with opacity regulations is to be demonstrated nonconcurrently with stack testing on a subject boiler or stack, three 1-hour sets of opacity observations shall be conducted under the following conditions:
 - a) Observation shall be performed by a certified opacity evaluator in accordance with Method 9, 40 CFR Part 60, Appendix A.
 - b) Two opacity observation sets shall be performed while the unit is operated at the conditions required by Part E.1.b and E.1.c. of this Exhibit.
 - c) One opacity observation set shall be performed while the unit is operated at maximum attainable load during a normal soot blowing cycle which is consistent with maximum frequency and duration normally experienced for the total testing period. Boilers operating in a peaking or cycling mode are required to operate the unit during this run at a changing load representative of normal operation.
 - 5) The source must meet all the conditions found at 40 CFR Part 60 subp. A. - General Provisions; as well as the specific NSPS requirements according to source type.

c. The following requirements apply to all combustion sources:

- 1) At least one of the three test runs shall be conducted during a normal soot blowing cycle which is consistent with maximum frequency and duration normally experienced for the total testing period. The arithmetic average of the three runs will form the basis for a compliance determination.
- 2) Stoker-fired boilers and other sources as determined by the Division Manager, are required to pull ashes during one or more test runs. The arithmetic average of the three runs will form the basis for a compliance determination. This must coincide with the run when soot is being blown.
- 3) Boilers operating in a peaking or cycling mode are required to operate the unit at a load change representative of normal operation during one of the test runs. This run may coincide with the run when ashes are being pulled and soot blown. The arithmetic average of the three runs will form the basis for a compliance determination.
- 4) Sources equipped with only mechanical collector, venturi scrubbers without variable throat and hot-side electrostatic precipitators are required to conduct an additional test for particulate matter, while the combustion source is operating at 50% of the design capacity. Soot blowing and pulling of ashes shall be included during one of the runs as specified in paragraphs E.1.c.1) and E.1.c.2) of this Exhibit.
- 5) Unless the Company is engaged in a compliance schedule that involves rehabilitation before testing, the Company shall not conduct any major rehabilitation or cleaning before the test other than normal maintenance operations done on a routine basis. The Company shall describe in the test report any maintenance work done before the test and indicate how often this is done.
- 6) The Company shall burn "the worst quality fuel" allowed by the compliance document conditions. Fuel sampling and analysis shall be performed according to ASTM Reference Methods, or as approved by U.S. EPA and the MPCA.
- 7) Each unit shall be operated under parameters as specified by the Agency which shall be defined as maintenance of operational parameters at levels consistent with levels maintained during daily usage of the boiler(s) at maximum load. Operating parameters include:
 - a) MW (mega watts) gross loading
 - b) heat input
 - c) steam flow
 - d) steam temperature
 - e) steam pressure
 - f) combustion air flow (lb/hr)

- g) soot blowing cycle
 - h) coal feed rate to boiler (T/hr)
 - i) oxygen levels at economizer inlet
- 8) Operation of electrostatic precipitators (ESPs) shall comply with "normal operating conditions". "Normal operating conditions" for an ESP reflect normal levels of:
- a) FGC injection rates, where applicable
 - b) primary and secondary volts
 - c) primary and secondary amps
 - d) inlet flue gas temperature
 - e) ash removal
 - f) spark rate
 - g) rapping cycle
- 9) Operation of other control devices such as baghouses, multiclones or scrubbers shall comply with "normal operating conditions". "Normal operating conditions" reflect normal levels of:
- a) pressure drop across control device
 - b) inlet flue gas temperature
 - c) cleaning cycle
 - d) ash removal
 - e) liquid to gas ratio
- 10) All the operating loads and parameters must be documented in the test report showing chart recordings and calculations.
- 11) All the continuous monitor strip charts for the day(s) of testing shall be submitted. These shall be dated, signed and all the chart factors must be sufficiently explained to avoid any kind of ambiguity in reading the charts.
- 12) Opacity observations shall be performed by a certified opacity observer in accordance with U.S. EPA Method 9, 40 CFR Part 60, Appendix A, throughout the test period. Opacity shall be observed during the period of the test for sixty consecutive minutes; i.e. one series of readings for each condition tested. The test will comprise 240 consecutive readings and shall be obtained concurrently with the run of the particulate sampling test when soot is being blown and ashes pulled. The appended opacity data form should be used and copies included in the report. U.S. EPA Method 9 shall be followed. Data reduction shall be according to D.3.d of this Exhibit.

2. Process Sources

- a. Non-combustion emission sources not subject to NSPS shall be operated during the test at 50-100% design capacity or maximum capacity allowed by the permit (as specified by the MPCA or U.S. EPA) and the owner/operator of the facility shall furnish adequate demonstration of the production at the time of the test.

- b. Sources subject to NSPS shall be operated using the test at 100% of the design capacity. The only exceptions to this are where the Permittee has documented that the source is physically incapable of operation at design capacity and/or there is a State/Federal enforceable order or permit limiting operation to a reduced capacity. The source must meet all the requirements found at 40 CFR Part 60, subp. A - NSPS General Provisions; as well as the specific requirements according to the source type.
- c. Sources may be required to conduct additional tests at reduced capacities if the Division Manager defines it as a necessary condition to represent "the worst case operation".
- d. NSPS sources, initial test: Pursuant to the amendments to the opacity provisions published in Federal Register of December 27, 1985, sources subject to New Source Performance Standards are required a minimum total time of opacity observations of three (3) hours for the purpose of demonstrating initial compliance. Opacity observations shall be conducted concurrently with the initial performance test for particulates.
- e. Opacity shall be observed during the period of the test for sixty consecutive minutes i.e. one series of readings for each condition tested. The test will comprise 240 consecutive readings and shall be obtained concurrently with a run of the particulate sampling test. U.S. EPA Method 9. Opacity readings of portions of plumes which contain condensed, uncombined water vapor shall not be used for purposes of determining compliance with opacity standards.
- f. In case opacity measurements are conducted at a different time than during the particulate test, the observation of opacity shall be conducted at all the conditions required by paragraphs E.2.a., E.2.b. and E.2.c. of this Exhibit.
- g. The source shall use the "dirtiest" feed materials that are allowed to be used.
- h. All operating loads and parameters must be documented in the test report showing all chart recordings and calculations. All charts must be dated, signed and all the chart factors must be sufficiently explained to avoid any kind of ambiguity in reading the charts.

3. Runs

A test shall comprise three runs of at least one hour each unless specified otherwise by the Agency. The time of sampling at each point shall be a minimum of two (2) minutes, and the minimum sample volume shall be 32 SCF (dry).

The "dirtiest" raw material shall be processed or handled as specified by the Agency.

4. Pitot Tube Calibration

Pitot tube inspections and necessary calibrations shall be done at least once per year or after any incident which may affect calibration. Gas meter calibrations shall be done at a frequency such that no more than 1000 CFM shall be measured between calibrations. These calibration sheets must be included in the test report.

5. Orsat Analysis

Two gas samples for Orsat analysis must be taken at 1/2 hour intervals, or one continuous sample may be collected for each run.

6. Multiple Particulate Samples

If multiple samples are to be taken using the same nozzle, probe, and cyclone, the particulate collected in these must be removed after each run. Cleaning of this front half of the apparatus should be with distilled water followed by acetone. The probe should be scrubbed with a stiff brush while irrigating with water followed by acetone, as prescribed in U.S. EPA Method 5.

7. Filters

Filters shall be numbered and filter number reported with the initial and final filter weights. Weights should be recorded in a weights book which must be available for inspection. Front half washings shall be reported independently of filter catch.

8. Gas Velocities

The gas velocities used in calculating stack gas flow rates and pollutant mass emission rate shall be those obtained while collecting the sample.

9. condensible Particulate Matter

In the event that emissions from any industrial process equipment contain condensible vapors which condense at standard conditions of temperature and pressure, condensible particulate matter may be determined by U.S. EPA Method 202, provided that the test either shall use the same sampling train or shall use an alternate sampling train with the same filter temperature as is used to determine noncondensable particulate matter emissions from the source. Condensible vapors includes organic and/or inorganic condensibles.

10. Safety and Access

A safe working platform and access thereto shall be provided at the sampling site.

11. Good Testing Practices

Failure to follow good testing practices will jeopardize the validity of the test and may lead to rejection of one or more runs.

Failure to submit the required information on plant operating conditions, fuel analysis, visible emissions, etc. shall be cause for the Division Manager not to approve the performance test.

F. Witnessing

A compliance test may be witnessed by either Air Quality Division or U.S. EPA staff.

G. Reporting

1. Responsibility to Submit Test Results

The applicable Required Data for Combustion Sources form, or the Required data for Process Emissions form located in Exhibit 2 shall be signed by the responsible supervisor of the facility and shall be submitted to the Supervisor, Compliance Determination Unit with 1 copy of the performance test results.

It shall be the responsibility of the owners/operators of the source to furnish the information required in Exhibit 2.

All performance test reports shall be submitted to the Supervisor, Compliance Determination Unit whether or not the test data indicates compliance with applicable emission limitations; and whether or not the test was conducted for the purpose of demonstrating compliance with an applicable emission limit.

The report should clearly state members of the testing team and a responsible party should sign the report, as well as the principal author(s).

2. Report Format

a. Summary Tables

The report shall include a summary table(s) showing the most relevant information, data, and results. This should include the applicable emission rate: pounds per million BTU, grains per dry standard cubic foot or pounds per hour calculated by all of the following methods:

- 1) The dry standard volumetric method
- 2) The ratio of areas method
- 3) The F factor method (for pounds per million Btu only)

b. Schematic Drawing

The report shall include a schematic drawing of the entire flue gas exhaust system from the initial starting process (feed) to the top of the stack. Show location of the sampling points and include all pertinent dimensions (inside diameter of stack, and distances below and above sampling ports). Include all flow disturbances, i.e., elbows, dampers, fans, constrictions, collection equipment, etc.

c. Identification of Sources

The report shall clearly state what is being tested; for example, "Babcock & Wilcox Boiler, Model 169, Designated Unit #3 by XYZ Municipal Power Plant, firing pulverized Eastern Kentucky coal at an average rate of 10,000 pounds per hour, and producing an average of 110,000 pounds of steam per hour. This unit exhausts through a Western Multiclone. Flyash reinjection is permanently disconnected."

d. Completion of forms in Exhibit 2

The use of Required Data for Combustion sources form and Required Data for Process Emissions form located in Exhibit 2 shall be completed at the time of the test run. Separate forms shall be completed for each run. The forms shall be submitted as part of the report, they must be complete and accurate.

e. The Stack Test Report Format Guidelines developed by AQD are recommended for incorporation into testing firm report formats.

3. Report Submittal

The performance test report shall be submitted to:

Supervisor, Compliance Determination Unit
Compliance and Enforcement Section
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, Minnesota 55155

4. Upon written verification from the AQD Manager that compliance was demonstrated under conditions of the performance test, the written verification shall constitute a modification of the compliance document that required the performance test. This modification shall allow the owner or operator to operate the emission unit under the conditions of the test. The emission facility shall not be operated at a production rate or under alternative operating parameters which might cause an increase in emissions over the conditions tested unless another performance test is conducted at the new condition and the test demonstrates compliance under the new condition and written authorization to proceed is given by the AQD Manager.

5. Submittal Schedule

Performance test reports shall be submitted no later than 45 days following completion of the performance test, or as required in compliance document (permit, stipulation agreement, Administrative Penalty Order, etc.), to the Supervisor, Compliance Determination Unit.

The Permittee is also responsible for providing a microfiche copy of the Performance test report within 105 days of testing. To microfiche

a copy of a performance test report, contact the State Department of Administration-Micrographics Services Unit at (612)296-9708. The complete permit file number, complete facility name, and the exact date of testing must be provided.

REQUIRED DATA
for
COMBUSTION SOURCES

Company Name _____

C. Fuel Input

1. Itemize all fuels and materials that are added to the combustion process during the test period. Attach ultimate analysis of the fuel.

FUEL DESCRIPTION	INPUT	&	As Rec'd	HEAT INPUT
Coal: State, City, Mine	(LBS/HR)	MOISTURE	(BTU/LB)	(BTU/HR)
Oil: Specify Grade	(GAL/HR)	As Rec'd	(BTU/GAL)	

No. 1

No. 2

No. 3

TOTAL _____

2. Are the above fuels substantially the same as those normally burned?
_____. If not, explain _____

3. Are the above fuels normally burned in the proportions shown above?
_____. If not, explain _____

4. Describe any changes anticipated for procurement of fuels within the next twelve (12) months. _____

D. Equipment & Operating Data

1. Furnace No. _____.
2. Furnace Mfg. _____.
3. Type of Firing _____.
4. Operating under normal operating conditions No _____;
Yes _____.
5. Specify normal soot blowing frequency:
 - a) source operating time blowing soot: _____ minutes/shift
 - b) number of shifts per day _____.
6. Specify soot blowing time during the test: start _____ end _____.
When was the last time before the test that you blew soot: (date & time) _____.
7. Specify normal ash pulling frequency:
 - a) source operating time pulling ashes: _____ minutes/shift
 - b) number of shifts per day _____.
8. Specify ash pulling time during the test: start _____ end _____.
When was the last time before the test that you pulled ashes: (date & time) _____.
9. Date and procedures of last maintenance/cleaning of the boiler (please attach) _____.

E. Instrument Data

1. Include a copy of chart records during test for the combustion efficiency indices (CO, O₂, CO₂, combustibles, steam flow, air flow, etc.)

F. Air Pollution Control Equipment

1. Type/model control equipment _____.
2. Air pressure drop across the control equipment _____.
3. Air flow through the control equipment _____.
4. Was the control equipment operating normally? _____.
5. Date and procedures of last maintenance/cleaning of control equipment.

_____.

Plant Operator's Certification

I certify that the information submitted herein is accurate and correct and that no information requested was withheld from the Division Manager.

By _____ , Position _____

REQUIRED DATA
for
PROCESS EMISSIONS

Company Name _____

C. Equipment & Operating Data

1. Process Equipment No./Ident. _____
2. Process Equipment Description _____

3. Process equipment operating under normal operating conditions?
No _____ Yes _____ Process rate during the test _____.
(raw materials or finished product)

D. Instrument Data on Process Equipment

1. Include copy of production records or instrumentation which indicates rate of production or operation of the equipment, i.e. units per hour, lbs. per hour, pressure, air flow, etc.

E. Air Pollution Control Equipment

1. Type/model of control equipment _____
2. Air pressure drop across the control equipment _____
3. Air flow through the control equipment _____
4. Was the control equipment operating normally? _____
5. Date of last major maintenance/cleaning of control equipment _____

F. Plant Manager's Certification

I certify that the information submitted herein is accurate and correct and that no information requested was withheld from the Division Manager.

By _____, Position _____

EXCESS EMISSION AND CEM REPORTING FORMPOLLUTANT - SO₂, NO_x, CO, CO₂, O₂, TRS, H₂S, HCl, Opacity (Circle One)

OTHER _____

REPORTING QUARTER _____

FACILITY: _____

Monitor

Model: _____

Mfr.: _____

Emission

Limit and

Avg. Time: _____

_____EMISSION
UNIT(S) _____TOTAL OPERATING HOURS
OF EMISSION UNIT _____

EMISSION DATA SUMMARY	CEM PERFORMANCE SUMMARY
1. DURATION OF EXCESS EMISSIONS A. STARTUP/SHUTDOWN _____ B. CONTROL EQUIPMENT _____ C. PROCESS PROBLEMS _____ D. OTHER KNOWN CAUSES _____ E. UNKNOWN CAUSES _____ F. SOOT BLOWING _____ G. FUEL PROBLEMS _____	1. DURATION OF CEM DOWNTIME DURING SOURCE OPERATION A. MONITOR MALFUNCTION _____ B. NON-MONITOR MALFUNCTION _____ C. QA CALIBRATION _____ D. OTHER KNOWN CAUSES _____ E. UNKNOWN CAUSES _____
2. TOTAL DURATION _____	2. TOTAL DURATION _____
3. PERCENT OF TOTAL EXCESS EMISSIONS _____	3. PERCENT OF TOTAL CEM DOWNTIME _____

FOR OPACITY RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

% CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period.

I certify that I am familiar with the information contained in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: _____

DATE: _____

AQD EER1

CONTINUOUS MONITOR DOWNTIME REPORT.
QUARTER _____

EMISSION UNIT(S) _____

Date	Start/Stop Time	(Pollutant) Monitor	Reason/ Corrective Action
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EXPERIMENTAL TECHNOLOGY PROCEDURES

1. objective: Determine particulate reductions at design steam flow rate of 2500 lb/hr of steam.

Proposed Procedure: Run three particle size distribution tests during the first two weeks of operation. All testing will be done with the incinerator and scrubber at optimal permitted operating parameters. Week No. 3 will be devoted to data analysis. During the fourth week, the Commission will schedule a briefing with the MPCA, University of Minnesota, and Commission staff to discuss preliminary results.

2. objective: Determine the effect of steam flow rate on particulate reduction.

Proposed Procedure: Two particulate size distribution tests will be conducted at lower steam flow rates and two tests at higher steam flow rates. The Commission will conduct one test per week. Upon completion of the testing, the Commission will schedule a briefing to discuss the results.

3. objective: Evaluate the plugging rates of various types of mist eliminators of different packing densities.

Proposed Procedure: Each of the mist eliminators will be installed to determine water collection efficiency and rate of plugging. At least two particle size distribution tests will be conducted on each type of mist eliminator. The steam rate will be set at the rate determined from the first two months of testing. Upon completion of the data analysis, the Commission will schedule a briefing.

4. objective: Evaluate the two methods of steam conditioning.

Proposed Procedure: The steam conditioning valve and the packing tower will be run separately (two weeks each) with two tests for each method.

5. objective: Evaluate steam injection system at preliminary optimal process parameters (steam flow, mist eliminator, and steam conditioning).

Proposed Procedure: Run the steam conditioning system for one month at the optimal operating parameters determined in the earlier testing. Run at least three particle size distribution tests during the month. Upon completion of testing, the Commission will schedule a briefing to discuss the final results and the feasibility of permanent installation of equipment on the incinerators.

STATE OF MINNESOTA
MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of the Metropolitan Council

Proceedings to Develop
and Implement a State Implementation
Plan for the Ramsey County PM-10
Nonattainment Area to Demonstrate,
Attain and Maintain Compliance with the
National Ambient Air Quality Standards
for Particulate Matter as Required by Sections
110, 172 and 189 of the Clean Air Act,
42 U.S.C. §§ 7410, 7502 and 7513a.

AMENDMENT ONE TO
SECOND AMENDED
FINDINGS AND ORDER

The Minnesota Pollution Control Agency (MPCA), being fully advised in the premises and with the consent of the Metropolitan Council, hereby adopts this Amendment One to Second Amended Findings and Order (hereinafter Original Order). The Original Order was issued to the Metropolitan Waste Control Commission (now Metropolitan Council) and is part of Minnesota's State Implementation Plan (SIP) to control emissions of particulate matter in Ramsey County. (This amendment reflects a name change.) The SIP, including the Original Order, was submitted to the U.S. Environmental Protection Agency (EPA) on November 30, 1992. The MPCA intends to submit this Amendment One to the EPA for approval as part of the SIP.

In making the changes, underline denotes additions and strikethrough denotes deletions to the original language.

1. Amendment One authorizes the following revision to number 8 of the Findings portion of the Original Order:

8. The MPCA has promulgated rules preventing any person from emitting any pollutant "in such an amount or in such a manner as to cause or contribute to a violation of any ambient air quality standard beyond such person's property line..." Minn. Rules pt. 7005.0020 (1991). Minn. Rules pt. 7009.0080 sets primary and secondary ambient air quality standards for PM-10 that are the same as the NAAQS: 150 micrograms per cubic meter, maximum 24-hour average concentration and 50 micrograms per cubic meter, annual arithmetic mean. ~~The MPCA has adopted a secondary ambient air quality standard for particulate matter, measured as total suspended particulate (TSP), of 150 micrograms per cubic meter, maximum 24 hour concentration not to be exceeded more than once per year. Minn. Rules pt. 7005.0080 (1991). Exceedances of the federal 150 microgram per cubic meter NAAQS for PM 10 are by definition exceedances of the state TSP standard, because PM 10 is a subset of TSP.~~

2. Amendment One authorizes the following revision to number 13 of the Findings portion of the Original Order:

13. The ~~Metropolitan Waste Control Commission (Commission)~~ and the Metropolitan Council (Council), ~~are~~ is a public ~~agencies~~ agency organized and existing under the laws of the state of Minnesota, and ~~are~~ is responsible for the operation and capital improvements at the Metropolitan Wastewater Treatment Plant at 2400 Childs Road, in St. Paul in the county of Ramsey, state of Minnesota (the Facility). ~~The Council shall be liable only to the extent of its statutory authority over the Facility.~~

3. Amendment One authorizes the following revision to the first paragraph of the Order portion of the Original Order:

NOW, THEREFORE, IT IS ORDERED, that the ~~Commission~~ Council shall comply with the requirements listed below in operating the Metropolitan Wastewater Treatment Plant in order to attain, demonstrate, and maintain compliance with the federal ambient air quality standards for PM-10 as set forth in 40 C.F.R. 50.6. ~~In addition, the Council is ordered to generally facilitate the Commission's compliance with the Order, but only to the extent of the Council's statutory authority over the Facility. Specifically, the Council shall approve any necessary capital improvement program and secure the funds for any necessary capital improvement program and secure the funds for any capital projects the Commission may require to comply with this Order.~~

4. Amendment One authorizes the following revision to the entire Original Order:

Replace the word "Commission" with "Council".

5. Amendment One authorizes the following revision to the table in Part I.B.1. of the Original Order (other parts of the table remain unchanged):

Emission Point	Pollutant	Compliance Determination Method	Minimum Frequency	Testing Procedures and/or Exhibit
1-6 (sludge incinerators)	Opacity	Visual Observations	Annually <u>As requested by the AOD Manager or an authorized EPA official</u>	(no change)

6. Amendment One authorizes the following revision to Part V.B. of the Original Order:

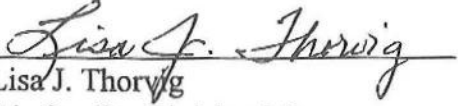
Part V.B.:

Annual Reports

The Company...a record of each unscheduled start-up, shutdown, bypass and breakdown of process and control equipment described in Part II of Exhibit I, and...

Amendment One shall become effective on the date it is executed by the MPCA Air Quality Division Manager. Except as expressly amended herein, all provisions of the Original Order remain unchanged and in full force and effect.

IT IS SO ORDERED BY THE MINNESOTA POLLUTION CONTROL AGENCY:


Lisa J. Thorvig
Air Quality Division Manager
Minnesota Pollution Control Agency

Date: 12-21-94

LJT:jmd